

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) Lock cylinder consisting of a cylinder housing ~~(10.3; 10.4)~~ and a cylinder core ~~(20.3; 20.4)~~, which is supported ~~(11)~~ rotatably in the housing,
  - a key with a defined longitudinal profile being assigned to the core,
  - with a group of diametric shafts ~~(23.3; 23.4)~~ arranged in a row in the axial direction of the cylinder core ~~(20.3; 20.4)~~,
  - which hold plate-shaped tumblers ~~(31.3-34.3; 31.4-33.4)~~, the longitudinal edges ~~(30.1; 30.2)~~ of which are free to slide longitudinally along guide surfaces ~~(21; 21)~~ of the shaft ~~(23.3)~~, the tumblers also being spring-loaded ~~(13.3; 13.4)~~ in one of the two directions of their movement;
  - where each tumbler ~~(31.3-34.3; 31.4-34.4)~~ has a control edge ~~(41.3-44.3; 41.4-43.4)~~ in correspondence with the longitudinal profile of the key, each control edge being located at a defined height;

-- with a radial opening ~~(61.3; 61.4)~~ in the cylinder core ~~(20.3; 20.4)~~ and an insert ~~(62.3; 62.4)~~, which can be inserted into the opening;

-- the outer end ~~(63.3; 63.4)~~ of which never projects beyond the external contour of the cylinder core ~~(20.3; 20.4)~~ after insertion of the insert into ~~in~~ the radial opening, the insert being fixed in position in the opening, whereas the inner end ~~(64.3; 64.4)~~ always engages in a cutout ~~(36.3; 36.4)~~ in the facing edge of the longitudinal plate edge ~~(30.2)~~ of the tumbler ~~(31.3-34.3; 31.4-34.4)~~;

-- as a result of which each of the tumblers ~~(31.3-34.3; 31.4-34.4)~~ is secured in the cylinder core ~~(20.3; 20.4)~~ before the core is installed in the housing ~~(10.3; 10.4)~~ thereby preventing loss of the tumblers;

wherein

-- the insert consists of a non-displaceably positioned comb-shaped comb-like body ~~(comb 62.3; 62.4)~~ with radial teeth ~~(36.3, 36.3; 36.4, 36.4')~~, the inner ends ~~(64.3; 64.4)~~ of which have a profile with at least one pair of oppositely-facing flanks ~~(flank pair 37.3a/38.3a, 37.3i/38.3i; 37.4/38.4, 37.4'/38.4')~~;

-- whereas the cutouts ~~(26.3; 26.4)~~ in the tumblers ~~(31.3-34.3; 31.4-34.4)~~ have at least one pair of opposing flanks ~~(opposing flank pair 27.3a/28.3a; 27.3i/28.3i; 27.4a/28.4a;~~

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~~27.4i/28.4i}, which are in different positions on the tumblers  
(31.3-34.3; 31.4-34.4) which have their control edges (41.3-44.3;  
41.4-43.4) at different heights; in that~~

-- the flank pairs ~~(37.3a/38.3a, 37.3i/38.3i, 37.4/38.4,  
37.4'/38.4')~~ and the opposing flank pairs ~~(27.3a/28.3a,  
27.3i/28.3i, 27.4a/28.4a, 27.4i/28.4i)~~ are arranged in such a way  
that, after the comb ~~(62.3; 62.4)~~ has been inserted and the key  
has been withdrawn, the control edges ~~(41.3-44.3; 41.4-43.4)~~ of  
at least two tumblers ~~(31.3-34.3; 31.4-34.4)~~ are at the same  
height ~~(50.4, 60.3, 60.4; 50.5, 60.5, 60.6)~~, which thus conceals  
the actual position of the control edges ~~(41.3-44.3; 41.4-43.4)~~,

-- whereby when, in the rest position of each of the (13.3;  
13.4) tumblers (31.3-34.3; 31.4-34.4), only one of the flanks of  
a flank pair (38.3i) rests against one of the opposing flanks  
~~(28.3i)~~ and/or

-- whereby when, in an actuated position, after maximum  
displacement ~~(77)~~ of the tumblers ~~(31.3-34.3; 31.4-34.4)~~ by a  
lock-picking tool, the other flank of the flank pair (37.3i)  
meets the other opposing flank ~~(27.3i)~~.

2. (Currently amended) Lock cylinder according to Claim 1,  
wherein a set of different combs ~~(62.3; 62.4)~~ is assigned to a  
plurality of similar cylinder cores ~~(20.4)~~, the teeth ~~(36.3,~~

~~36.3'; 36.4, 36.4')~~ of the combs being provided with different profiles.

3. (Currently amended) Lock cylinder according to Claim 1, wherein a set of different combs ~~(62.3; 62.4)~~ is assigned to a plurality of similar cylinder cores ~~(20.4)~~,

-- where the teeth ~~(36.3, 36.3'; 36.4, 36.4')~~ of the combs have similar profiles and are arranged in either a the normal or reversed position as desired and/or in different sequences on the comb ~~(62.3; 62.4)~~;

-- where, in order to increase the number of variations of the lock cylinder, one of these different combs ~~(62.3; 62.4)~~ is selected and inserted into one of the cylinder cores ~~(20.3; 20.4)~~ of uniform type.

4. (Currently amended) Lock cylinder according to Claim 1, wherein the profiles of all the teeth ~~(36.3, 36.3'; 36.4, 36.4')~~ on the comb are of similar design.

5. (Currently amended) Lock cylinder according to Claim 1, wherein the opposing flanks ~~(27.3a/28.3a; 27.3i/28.3i; 27.4a/28.4a; 27.4i/28.4i)~~ of the cutouts ~~(26.3; 26.4)~~ are offset from each other in the height direction in the case of the

tumblers ~~(31.3-34.3; 31.4-34.4)~~ with control edges ~~(41.3-44.3;~~  
~~41.4-43.4)~~ in different positions.

6. (Currently amended) Lock cylinder according to Claim 1, wherein the inner ends ~~(64.3; 64.4)~~ of the teeth ~~(36.3, 36.3'; 36.4, 36.4')~~ of the comb are convexly profiled in the radial direction with at least two pairs of flanks ~~(37.3a/38.3a; 37.3i/38.3i; 37.4/38.4; 37.4'/38.4')~~, which are arranged in sequence in the direction of longitudinal movement and are at different heights; in that

-- the cutouts ~~(26.3; 26.4)~~ in each of the tumblers ~~(31.3-34.3; 31.4-34.4)~~ are concavely profiled in the radial direction and have sections which form at least two pairs of opposing flanks ~~(27.3a/28.3a; 27.3i/28.3i; 27.4a/28.4a; 27.4i/28.4i)~~, which are arranged in sequence in the direction of longitudinal movement and are offset from each other in the height direction.

7. (Currently Amended) Lock cylinder according to Claim 1, wherein all of the teeth have essentially the same convex profile at their inner ends ~~(64.3; 64.4)~~, they are positioned in similar openings of the cylinder core ~~(20.3; 20.4)~~ in two different laterally reversed orientations, one orientation defining normal

teeth and another orientation defining reversed teeth (normal teeth 36.3; 3.64 / reversed teeth 36.3', 36.4'); and in that -- the pairs of flanks (37.3a/38.3a, 37.3i/38.3i, 37.4/38.4, 37.4'/38.4') of each of the normal teeth (36.3; 36.4) are laterally reversed with respect to those of the reversed teeth (36.3'; 36.4').

8. (Currently amended) Lock cylinder according to Claim 7, wherein the normal tooth (36.3; 36.4) of the inserted comb (62.3; 62.4) is laterally reversed with respect to a transverse plane, which passes diametrically through the cylinder core (20.3; 20.4) in the area of the axis and extends transversely to the spring-loading (13.3; 13.4) of the tumblers (31.3-34.3; 31.4-34.4).

9. (Currently amended) Lock cylinder according to Claim 1, wherein a the maximum point of the tooth profile (36.3, 36.3') positioned in the cylinder core (20.3) lies essentially on a the transverse plane (71.3) of the cylinder core (20.3).

10. (Currently amended) Lock cylinder according to Claim 9, wherein a tooth (36.3; 36.3') of the comb has two pairs of flanks (37.3a/38.3a; 37.3i/38.3i), namely, an inner pair (37.3i/38.3i), which is closer to the transverse plane (71.3) of the cylinder

core ~~(20.3)~~, and an outer pair ~~(37.3a/38.3a)~~, which is farther away from the transverse plane ~~(71.3)~~.

11. (Currently amended) Lock cylinder according to Claim 10, wherein the flanks of inner flank pair ~~(37.3i/38.3i)~~ are symmetrical to the transverse plane ~~(71.3)~~ of the cylinder core ~~(20.3)~~,

-- whereas the flanks ~~(37.3a, 38.3a)~~ of the outer flank pair are asymmetric with respect to the transverse plane ~~(71.3)~~.

12. (Currently amended) Lock cylinder according to Claim 10, wherein the flanks of the inner flank pair ~~(37.3i/38.39)~~ are parallel to the transverse plane ~~(71.3)~~, whereas

-- the flanks of the outer flank pair ~~(37.3a/38.3a)~~ are positioned at an angle to the transverse plane ~~(71.3)~~.

13. (Currently amended) Lock cylinder according to Claim 12, wherein the two outer flanks ~~(37.3a, 38.3a)~~ are angled as in the same way as essentially mirror images of each other.

14. (Currently amended) Lock cylinder according to Claim 13, wherein a ~~the~~ length of one of the outer flanks ~~(37.3a)~~ is different from a ~~length that~~ of the other outer flank ~~(38.3a)~~.

15. (Currently amended) Lock cylinder according to Claim 1, wherein ~~the maximum points of the teeth (36.4, 36.4')~~ of the inserted comb ~~(62.4)~~ are located a certain distance away in the height direction from a ~~the~~ transverse plane ~~(71.4)~~ of the cylinder core ~~(20.4)~~.

16. (Currently amended) Lock cylinder according to Claim 15, wherein a ~~the~~ convex profile serving to control the tumbler ~~(31.4-34.4)~~ is positioned at one end of the tooth ~~(36.4, 36.4')~~.

17. (Currently amended) Lock cylinder according to Claim 15, wherein a ~~the~~ convex profile of a ~~the~~ normal tooth ~~(36.4)~~ is an exact mirror image of a ~~the~~ profile of a ~~the~~ reversed tooth ~~(36.4')~~ in a ~~the~~ direction of ~~the~~ longitudinal movement of the tumblers ~~(41.4-4.4)~~.

18. (Currently Amended) Lock cylinder according to Claim 15, wherein a ~~the~~ convex profile of the teeth ~~(36.4, 36.4')~~ has only one pair of flanks ~~(37.4/38.4; 37.4'/38.4')~~, one of the flanks of the pair ~~(37.4, 37.4')~~ has a form different from that of the other flank of the pair ~~(38.4, 38.4')~~.

19. (Currently amended) Lock cylinder according to Claim 18, wherein one of the flanks ~~(38.4, 38.4')~~ is essentially parallel to the transverse plane ~~(71.4)~~ of the cylinder core ~~(20.4)~~, whereas the other flank ~~(47.4, 47.4')~~ forms an angle with that plane.

20. (Currently amended) Lock cylinder according to Claim 15, wherein ~~the~~ normal teeth ~~(36.4)~~ and ~~the~~ reversed teeth ~~(36.4')~~ are arranged in an alternating sequence in ~~the~~ successive shafts ~~(23.4)~~ of the cylinder core ~~(20.4)~~.

21. (Currently amended) Lock cylinder according to Claim 20, wherein the comb ~~(62.3, 62.4)~~, has an even number of teeth ~~(36.4, 36.4')~~; and in that

-- the comb ~~(62.4)~~ can be inserted into the cylinder core ~~(20.4)~~ with either one of two different orientations, one the reverse of the other,

-- where the comb ~~(62.4)~~ begins with a normal tooth ~~(36.4)~~ when inserted with one of the two orientations, whereas a reversed tooth ~~(36.4')~~ is at a ~~the~~ front of the comb ~~(62.4)~~ when the comb is inserted with the other orientation.

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22. (Currently Amended) Lock cylinder according to Claim 1, wherein ~~the~~ cutouts ~~(26.3; 26.4)~~ in the individual tumblers ~~(31.3-34.3; 31.4-34.4)~~ are of similar design, and they have different dimensions as a function of a ~~the~~ height position of the control edge ~~(41.3-44.3; 41.4-44.4)~~.

23. (Currently amended) Lock cylinder according to Claim 22 23, wherein the cutouts ~~(26.3)~~ are designed with two steps and thus produce two pairs of opposing flanks ~~(27.3a-28.3i)~~ at different depths,

-- namely, an inner pair of opposing flanks ~~(27.3i, 28.3i)~~ on a ~~the~~ lower step of the cutout ~~(26.3)~~ and an outer pair ~~(27.3a, 28.3a)~~ on an ~~the~~ upper step.

24. (Currently amended) Lock cylinder according to Claim 23, wherein the cutout (26.4) has a separating web ~~(74.1-74.4)~~, and in that

-- as a function of the height position of the control edge ~~(41.4-44.4)~~ of an ~~the~~ associated tumbler ~~(31.4-44.4)~~, the lengths or positions ~~(76.1-76.4)~~ of the cutouts ~~(26.4)~~ and/or ~~the~~ positions of ~~the~~ webs ~~(74.1-74.4)~~ in the cutouts and/or ~~the~~ lengths of the webs are different.

25. (Currently amended) Lock cylinder according to Claim 24, wherein the separating web ~~(74.1-74.4)~~ is positioned essentially at a ~~the~~ longitudinal midpoint ~~(75.1-75.4)~~ of the cutout ~~(26.4)~~.

26. (Currently amended) Lock cylinder according to Claim 24, wherein the cutouts ~~(26.4)~~ have two pairs of opposing flanks ~~(27.4a-28.4i)~~,

-- where one of the pairs of opposing flanks ~~(27.4i, 28.4i)~~ is formed by ~~the~~ two terminal edges of the separating web ~~(74.1-74.4)~~, which form inner opposing flanks ~~(27.4i, 28.4i)~~, which face away from each other;

-- whereas the other pair of opposing flanks ~~(27.4a, 28.4a)~~ is formed by ~~the~~ two inner edges at an ~~the~~ outer end of the cutout ~~(26.4)~~, which form outer opposing flanks ~~(27.4a, 28.4a)~~, which face each other.

27. (Currently amended) Lock cylinder according to Claim 26 23, wherein the inner opposing flanks ~~(27.4i, 28.4i)~~ have a design different from that of the outer opposing flanks ~~(27.4a, 28.4a)~~.

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28. (Currently amended) Lock cylinder according to Claim 27, wherein the inner opposing flanks ~~(27.4i, 28.4i)~~ are essentially parallel to the transverse plane ~~(71.4)~~ of the cylinder core ~~(20.4)~~, whereas the outer opposing flanks ~~(27.4a, 28.4a)~~ are at a certain angle to the transverse plane ~~(71.4)~~.

29. (Currently amended) Lock cylinder according to Claim 28, wherein the angles of the two outer opposing flanks ~~(27.4a, 28.4a)~~ are essentially exact mirror images of each other.